

# NOTES ON THE CHEESEMAN HERBARIUM

## Part 1. Exchange with U.S.A. herbaria before 1900

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*Abstract.* Exchanges between Isaac C. Martindale, William M. Canby and other American collectors, with T. F. Cheeseman, are traced through specimens in the Auckland Institute and Museum Herbarium (AK) and letters to Cheeseman in the manuscript collection of the Auckland Institute and Museum Library.

In a recent paper, Meyer & Elsasser (1973) recorded that more than 200 Cheeseman specimens were in the Martindale Herbarium now at United States National Aboretum Herbarium, Washington, D.C. This information initiated a check of Martindale material in the Cheeseman Herbarium, Auckland Institute and Museum, and a perusal of letters to Cheeseman from botanists. Subsequent correspondence with Dr Meyer about the Martindale specimens in Auckland brought the reply, "It never occurred to us that you might have this material, since we are missing most of the Martindale correspondence." It is hoped that the following notes may bring to the notice of botanists the presence, in Auckland Institute and Museum Herbarium, of pre-1900 duplicate specimens from U.S.A. collections, and also point out the whereabouts of many early Cheeseman specimens sent in exchange.

### *History of exchange*

The exchange of botanical specimens between the Auckland Institute and Museum and overseas herbaria was begun by Mr T. F. Cheeseman in 1877. According to the *Report of the Auckland Institute for 1877-78*, arrangements were made by the Curator (Mr Cheeseman) "for interchanges with most of the principal European Museums, and a considerable number of specimens in all branches of natural history have been specially collected for this purpose." As well as writing to European museums, Cheeseman, in 1877, sent requests for exchange to eminent botanists at major institutions in U.S.A. which led to large-scale exchange with the two private American herbaria of Isaac C. Martindale, of Camden, New Jersey, and William M. Canby, of Wilmington, Delaware.

### *Isaac C. Martindale (1842-1893)*

"The 19th century herbarium of Isaac C. Martindale" (Meyer & Elsasser, 1973) contains an account of Martindale's life, the history of his herbarium and biographical notes on some of the many collectors who contributed to the herbarium. Therein it is stated that Isaac C. Martindale, a Quaker, was cashier in the National State Bank, Camden, New Jersey, and for some years "was Treasurer of the Academy of Natural Sciences of Philadelphia and a corresponding secretary of its botanical section". In the 1880s his was the second largest private herbarium in U.S.A., equal in quality to any of the institutional herbaria. After Martindale's death his herbarium

JOHN GILL, President,

ISRAEL W. HEULINGS, Vice-President.

ISAAC C. MARTINDALE, Cashier,

# National State Bank,

Camden, N. J. Oct. 15<sup>th</sup> 1877.

T. F. Cheeseman,

My friend Prof. J. Rothrock of the University of Pennsylvania Philadelphia has placed in my hands the correspondence from you relative to an exchange of plants, and has asked me to make the exchange as he had arranged for. He has very unexpectedly accepted a position in a Scientific Expedition just fitting out, to go around the world, I have not their programme before me, but it is possible New Zealand may be one of their stopping places, at any rate it purports to be a two years cruise. It gives me pleasure to make this exchange, for whilst my collection is well supplied with North American plants, your district is scarcely represented. Your letter states an exchange of 500 species, I purpose with your permission, changing that somewhat, and will make up a package for you of all the species, of which I have duplicates, which

Fig. 1. Portion of letter from Isaac C. Martindale to T. F. Cheeseman, 15 October 1877.

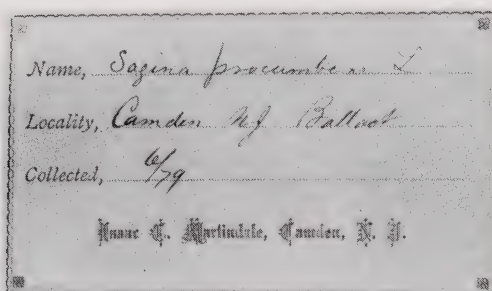


was bought, in 1894, by an old pharmaceutical firm for the Philadelphia College of Pharmacy and Science where it stayed until 1964, when the Martindale Herbarium of about 80,000 specimens was purchased by the United States Department of Agriculture for the National Arboretum, Washington, D.C. The principal collections are from North America and Europe but New Zealand is surprisingly well represented by "a fine set of T. F. Cheeseman along with a few collections of Thomas Kirk and Donald Petrie." Cheeseman's "fine set" amounts to at least 1800 specimens, according to Martindale correspondence in the manuscript collection in the Auckland Institute and Museum Library. Reciprocally, the Cheeseman Herbarium received a "fine set" of some 1800 specimens from Martindale.

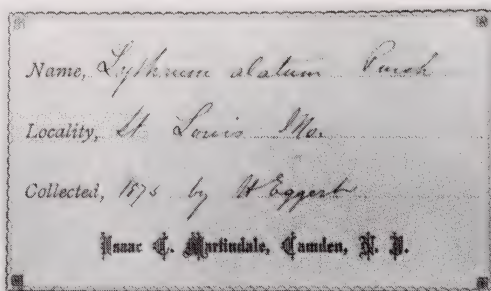
Exchange with Martindale was initiated by Cheeseman when he sought to exchange 500 specimens with H. C. Ward, Professor of Botany, University of Pennsylvania, Philadelphia, in May 1877. Professor Ward passed on this request to his successor, Professor J. T. Rothrock, who agreed to start an exchange with Cheeseman (Rothrock to Cheeseman, 18 June 1877). However, Rothrock "very unexpectedly accepted a position in a scientific Expedition just fitting out, to go around the world . . ." (Martindale to Cheeseman, 15 October 1877) (Fig. 1) and in turn passed the request to his friend Isaac C. Martindale. When the latter wrote to Cheeseman in October 1877 he proposed a larger exchange "nearer 1000 species". By November 1879 he claimed to have forwarded 1325 species to Auckland and he sent a further 475 in January 1881.

Cheeseman was indeed fortunate to receive so much ex Martindale material. According to Meyer & Elsasser (1973) Martindale "preferred to collect in fairly small sets, and for this reason his duplicates are not well represented in the herbaria of this country [U.S.A.]." It is known that Martindale sent duplicates "to Berlin and perhaps elsewhere on the Continent" but no specimens were listed at Kew or at Edinburgh. "Two specimens from New Jersey" were recorded at Oxford Herbarium (Clokier 1964).

The large number of duplicates of Martindale's personal collecting of ballast plants and weeds in his own state of New Jersey (Fig. 2) has proved most useful as reference material in identifying adventives of the Auckland province. Also included in the ex Martindale Herbarium material now in the Auckland Institute and Museum are specimens from other American collectors of the 19th century: G. Anspach,



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Figs. 2, 3. Herbarium labels. 2. Martindale label, June 1879 (11cm x 6.5cm). 3. Martindale label — collector H. Eggert, 1875 (11cm x 6.5cm).

C. F. Austin, J. W. Congdon, J. M. Coulter, H. K. D. Eggert (Fig. 3), E. Hall, T. Meehan, C. T. Mohr, E. Palmer, C. F. Parker, C. C. Parry, T. C. Porter, C. G. Pringle, W. W. Smith and L. F. Ward. As well as the hundreds of Cheeseman specimens in the Martindale Herbarium, to be seen today in the National Arboretum Herbarium, Washington, D.C., are New Zealand plants collected by J. F. Armstrong, T. Kirk, D. Petrie and W. Swainson, all ex Cheeseman Herbarium.

The shipping of exchange material between Auckland and U.S.A. was handled by Hugh Craig, Agent for Pacific Coast, in the California branch of the New Zealand Insurance Company, San Francisco. From Martindale's letters to Cheeseman it appears that the express freight from Camden, New Jersey, to San Francisco (US\$8.75) was more than twice the freight and dock charges from San Francisco to Auckland (US\$3.75). Mr Martindale made it clear that they should both share the "whole expense, whatever that may be, and when our whole exchange is completed we must have a settling day". (Martindale to Cheeseman 26 March 1878).

*William M. Canby (1831-1904)*

At much the same time and in much the same way Cheeseman began exchanging botanical specimens with William M. Canby of Wilmington, Delaware, whose private collection is now in the herbarium of the New York Botanical Garden (Meyer and Elsasser, 1973). In this instance Cheeseman first sought exchange (7 March 1879) with the celebrated botanist Asa Gray at Harvard University. Gray, who was fully occupied (revising his *Manual of Botany*?) sent Cheeseman's request to Canby, who agreed to supply the 700 species asked for, at once, and if further exchange was desired "could probably furnish specimens of several thousand species". (Canby to Cheeseman 8 April 1879). When Cheeseman sent his first package of plants to Canby he included a parcel for Asa Gray, who wrote in acknowledgement, "The specimens are most welcome. I was well supplied with the *old* New Zealand plants, but had almost none of these from the South and the interior. To show my gratitude and at the same time to save both of us trouble I am sending to Mr Canby a good many rare plants — as they come into my reach — to eke out the parcels he will send you." (Gray to Cheeseman 2 October 1879).

Canby was a friend of Martindale and both collectors, in their correspondence with Cheeseman, say how pleased they knew the other to be with the plants from New Zealand. Upon receipt of the first package Canby wrote to Cheeseman (30 September 1879), that he was delighted with the contents:

"In fact I do not remember to have ever received an envoi of plants which gave me more genuine pleasure and satisfaction. The specimens are remarkably fine and well taken; and the evident care that has been bestowed upon them in order that they might show well the characters of each species is something that in my experience is lamentably rare . . . At the same time that I received your package came one from Syria and the contrast between your specimens and those of my Syrian correspondent were very striking. Something is due I suppose to the difference in character of the floras of the two countries. The Syrian plants have a rough *weedy* appearance very different from the clean bright *native* cut of the New Zealand ones.

Having but slight knowledge of your flora I was very much struck with the alliance to and yet difference from our own. It astonished me to find so many orders and even genera the same as are represented in this country, and yet the specific types seemed far apart. I believe that there were but two plants, viz. *Oxalis corniculata* and *Triglochin triandrum* Mx. which were identical with our species. (It was truly surprising to me to find the latter in the collection.) . . ."



In May 1882, Canby also wrote:

“I have been very much charmed with the specimens you have sent me which do much to complete a representation of the very interesting flora of New Zealand. I have been very much interested in collating the specimens with some of Baron Mueller’s [Ferdinand von Mueller, Government Botanist, Melbourne] but find more differences than similarities. I beg to thank you very sincerely for the great pleasure you have given me by means of this parcel . . . The rare and in many cases singular plants of the mountains of the South Island have given me peculiar pleasure.”

As exchange, Canby in 1880, sent one box of “some 1800 species”. He wrote, “The bulk of the collection is made up of plants from the Eastern or Atlantic slope of the continent, including some of Dr Garber’s and Mr Curtiss’ rare Florida collections.” Canby’s own collections were from Eastern United States and many from his own state of Delaware (Fig. 4). Cheeseman apparently asked for some *Carex* species which Canby tried to obtain from other botanists without success so obligingly sent some from his own herbarium sheets (Fig. 5). Canby had “exchanged with everyone he could find who made good specimens” and “purchased all the collections of Curtiss, Hall, Bolander, Kellogg and other California and Oregon botanists.” (Harshberger, 1899).

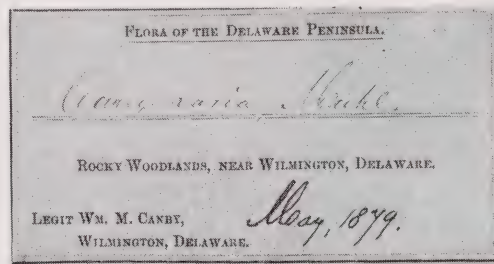


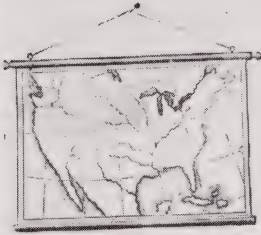
Fig. 4. Canby label — Flora of the Delaware Peninsula, May 1879 (9cm x 4.6cm).

Some well known collectors whose specimens are in the ex Canby material in the Auckland Institute and Museum Herbarium are: M. S. Bebb (a specimen of *Carex bebbii*), J. Blake, Dr Blodgett, H. N. Bolander, W. Boott, Mrs A. E. Bush, G. Butler, A. Commons, A. H. Curtiss, A. P. Garber, A. Gattinger, H. Gillman, M. E. Hyams, J. H. Mellichamp, E. Palmer (Fig. 6), C. C. Parry, H. N. Patterson, T. C. Porter, C. G. Pringle, Miss M. J. Reynolds and J. T. Rothrock (Fig. 7).

#### Thomas Morong (1827-1894)

Requests for specimens were received by Cheeseman from other American botanists after they had heard of Martindale’s and Canby’s exchanges or had read papers by Cheeseman in the *Transactions and Proceedings of the New Zealand Institute*.

The Reverend Thomas Morong, who described several American species of *Potamogeton*, wrote from Massachusetts (Morong to Cheeseman, 24 October 1887) asking for an exchange of aquatic plants, “having learned more or less of your collections from my friends, Mr Arthur Bennett of Croydon, England, and Mr W. M. Canby, of Wilmington, Del., in this country. Indeed Mr Bennett has sent me several



## Northern Transcontinental Survey

DEPARTMENT OF ECONOMIC BOTANY  
Wm. M. Canby, in charge.

Wilmington, Del. July 14 1888

My Dear Sir,

I have done my very best to obtain for you the specimens you desire by corresponding with our botanists but have been entirely unable to get specimens. If I can do so hereafter I will send promptly.

At present I can only send what I have (*C. capitata*) and what I could borrow from my Arabian sheets (*C. Pinnatifida*). I can scarcely hope that they will be of service.

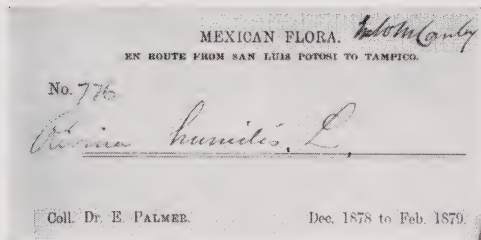
I have very much enjoyed looking over the last specimens you sent which I value very much.

Very sincerely Yours

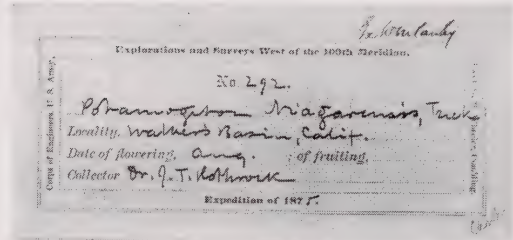
Wm. M. Canby

Fig. 5. Letter from Wm. M. Canby to T. F. Cheeseman, 14 July 1882.





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Figs. 6, 7. Herbarium labels. 6. Label of Dr E. Palmer, 1878-1879, ex Canby Herbarium (10cm x 4.6cm). 7. Label of Dr J. T. Rothrock, 1875, ex Canby Herbarium (11.5cm x 4.5cm).

Potamogetones of your collection, one of which he has named for you 'P. Cheesemani'." There is no further correspondence to confirm that any exchange took place between Cheeseman and Morong. The aquatic plants collected by Morong, in the Cheeseman Herbarium, are mostly labelled ex A. Bennett Herbarium. Bennett sent specimens from many collectors from many countries and it would be interesting to know how much Cheeseman material, sent to him in exchange, was re-distributed throughout the world.

#### *Liberty Hyde Bailey (1858-1954)*

Liberty Hyde Bailey (author of *The Standard Cyclopedia of Horticulture*) wrote from Cornell University asking Cheeseman for New Zealand Carices and was sent a package of these in 1891 (Fig. 8). Later, in 1916, Bailey wrote:

"One never knows what is to be found in an attic. I am now gradually mounting up all my specimens and I found a package in my attic of cyperaceous plants other than Carices which contained a very interesting lot of material. There were plants from Sardinia, Siberia, Spicer's things from Tasmania, and a lot of very interesting things collected by you between the years 1875 and 1881. How this package ever came into my possession, I do not know, but it was one of the exchanges that many years ago came into my hands among other good things. I was specially glad to see these good specimens from you and I have laid them all out to be mounted. Of course I have the very valuable collection of Carices that you sent me many years ago, but these plants I really did not know I had."

The exchange with Bailey seems to have been in his favour as none of his collections have been found in the Cheeseman Herbarium, although many American *Carex* species, described by him in early volumes of *Memoirs Torrey Botanical Club*, were sent by other collectors. *Carex* specimens ex Canby are plentiful but are absent in Martindale material sent to Cheeseman. Martindale wrote, "I have a large collection of Carices but not having studied them especially I cannot vouch for their accuracy, as they are bothersome to the last degree . . ." (Martindale to Cheeseman, 11 May 1882).

#### *Herman Theodor Holm (1854-1932)*

Another enquiry about Carices came from Theo. Holm, U.S. Department of Agriculture, Washington, D.C., who first wrote to Cheeseman in 1892. A parcel of *Carex* specimens was sent to Holm in 1893 and Cheeseman requested Californian and Arctic species in return, which he received. Later, in 1896, Holm wrote that he had mailed European Carices (Fig. 9) but these do not appear in the Cheeseman

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 BAILEY, L.H. 22. 4. 89  
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 I. P. ROBERTS, DIRECTOR. H. H. WING, DEPUTY DIRECTOR AND SECY. E. L. WILLIAMS, TREASURER.  
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 HORTICULTURAL DEPARTMENT.  
 L. H. BAILEY, PROFESSOR OF HORTICULTURE.  
 Ithaca, N. Y., Apr 22 1889.

*Handwritten notes:*  
 1000  
 Give to the Lib. with  
 the specimens  
 specimens sent to Lib. with  
 Working for

My Dear Sir: I am happy to be in receipt of your letter of the 25th ult., and the paper upon New Zealand Caricæ. I want any and all the New Zealand species, already have some, but like the same species from various sources. I shall be happy to send you a parcel this mail, containing some of our species. My stock of duplicates is so constantly ranging from numerous exchanges, that I can give you no list of what I shall have to spare. But I enclose you a catalogue, - now antiquated, however, - upon which you can mark such species as you have, and return to me. Then such as I have that you want, I shall send.

Last year I made an extensive tour of Europe in order to study the types of our North American caricæ, and a paper

Fig. 8. Portion of letter from L. H. Bailey to T. F. Cheeseman, 22 April 1889.



UNITED STATES DEPARTMENT OF AGRICULTURE,  
 DIVISION OF VEGETABLE PHYSIOLOGY AND PATHOLOGY,  
 WASHINGTON, D. C.

Mar 27. 1896

Mr. T. F. Cheeseman  
 Curator Auckland Museum,

My dear Sir,

Last week I mailed for you the European Caries, which I owed you in exchange for the magnificent collection you so kindly sent me some years ago. I must make an apology for having delayed the shipment so long, but I hope you will kindly excuse me.

In a short time I shall send you a paper upon American Caries, and this will soon be followed by others, dealing exclusively with the morphology and anatomy of this genus and some of the other Cypraced.

Hoping you will receive the Europ. Caries in good shape and that they will be of some value to you, I remain, dear Sir,

Cordially yours  
 Theodor Holm

Fig. 9. Letter from Theo. Holm, 25 May 1896.

Herbarium as ex Holm material. They may have been sent under the names of the European collectors without the Holm label. American Cyperaceae ex Holm are numerous in the Cheeseman Herbarium, especially in *Carex* with about 80 sheets (Fig. 10).

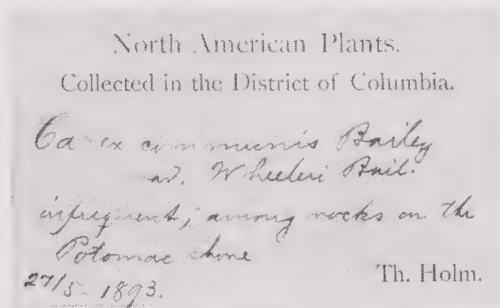


Fig. 10. Holm label, 27 May 1893 (9.5cm x 6cm).

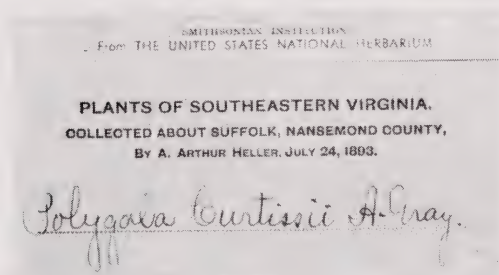
Holm's exchange included collections from: C. F. Baker, W. H. Brewer, C. I. Crandall, Walter H. Evans, Joseph V. Haberer, L. F. Henderson, T. Kearney, T. Kincaid, P. A. Rydberg, W. Trelease, T. A. Walpole.

#### *U.S. National Museum, Smithsonian Institute*

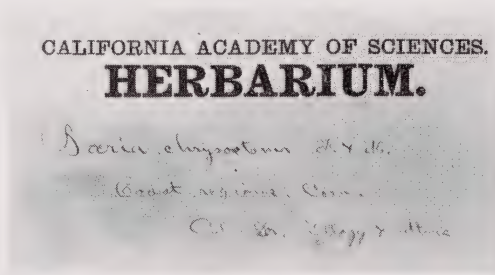
In 1891 Cheeseman sent natural history specimens, as exchange, to the U.S. National Museum, Smithsonian Institute, Washington D.C., including "470 species of New Zealand plants". He wrote to Professor Brown Goode, Smithsonian Institute, "The plants have been almost wholly collected by myself, during various exploring journeys in both Islands of New Zealand. You can rely on the nomenclature and localities." (Cheeseman to Brown Goode 14 August 1891). Not many collections of this pre-1900 period, from the United States National Herbarium, labelled as such, have been located in the Cheeseman Herbarium (Fig. 11).

#### *California Academy of Sciences*

A few of the old California Academy of Sciences labels, with HERBARIUM printed in large bold type, are found in the Cheeseman Herbarium with collections made by Dr Kellogg (Fig. 12). Although no correspondence with him or the Academy



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Figs. 11, 12. Herbarium labels. 11. Label ex U.S. National Herbarium (9.5cm x 1.2cm) — collector A. A. Heller, 24 July 1893 (8.8cm x 4.8cm). 12. California Academy of Sciences Herbarium label — collector Dr Kellogg & others (15.2cm x 9.2cm).



affixed -  
Michigan is - send set  
of 40 species 100 cases for  
\$ 5 - to be paid labelled with  
all fresh and new of economic  
and other value first in  
series.

C52

Feb 19 1892

MICHIGAN AGRICULTURAL COLLEGE

DEPARTMENT OF BOTANY AND FORESTRY

Agricultural College P. O.  
Ingham Co. Mich. Feb 19 1892

Dear Sir,  
I wish to make a collection of  
the herbarium spec. of the forest of your  
country for which we are authorized  
to pay a reasonable amount or send  
in equivalent of Michigan forest  
exchange.

Will you kindly say if you  
can furnish such a set and at  
what price, giving approximately the  
number, and if convenient the best  
specimens.

Also we are making a collection  
of photographs of leading botanist  
American origin - I would be pleased  
to receive yours, for which we hope  
we will be glad to pay in exchange kind.

Very truly yours  
W. J. Beal  
Prof of Botany

Fig. 13. Letter from W. J. Beal to T. F. Cheeseman, 19 February 1892.

has come to light, it is most likely that there was exchange before 1900. In 1893 Cheeseman sent seeds of New Zealand trees to Hugh Craig, the shipping agent in San Francisco, "for your 'Golden Gate' Park" (Cheeseman to Craig, 14 July 1893). Any Cheeseman specimens in the California Academy of Sciences Herbarium would almost certainly have been lost in the fire there, following the San Francisco earthquake in 1906.

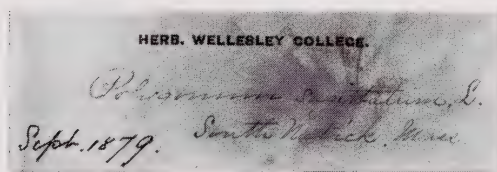
#### *Sale of specimens*

The only evidence of the sale of New Zealand botanical specimens by Cheeseman to U.S. botanists, before the turn of the century, came in letters from W. J. Beal, Department of Botany and Forestry, Michigan Agricultural College, 1892. He requested a set of New Zealand grasses from Cheeseman — "Will you kindly say if you can furnish such a set and at what price . . ." A note on Beal's letter (Fig. 13) in Cheeseman's hand, reads, "replied — willing to send set of 90 species 100 vars for £5 — to be fully labelled with all particulars of economic value and delivered free to Frisco." The collection was sent on October 7, 1892, and was duly received and paid for by W. F. Beal (Beal to Cheeseman, 1892).

#### *Conclusion*

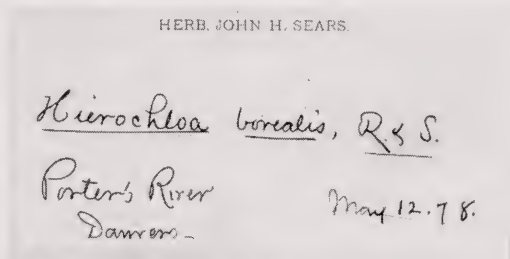
There are some American collections received by Cheeseman about which no correspondence has been traced — e.g. specimens labelled ex Herbarium Wellesley College (1873) (Fig. 14) and many ex Herbarium John H. Sears (1878) (Fig. 15). Fern collections of the 1870s, ex Herbarium Mrs Stiles M. Rust, include specimens from Mrs Charles Barnes and J. G. Lemmon, as well as those collected by Mrs Rust, signing herself "Mary Olivier Rust". Under the label "Herbarium Juncorum Boreali-Americanorum Normale, ed. G. Engelmann, St Louis, Missouri, 1868" there are *Juncus* specimens collected in 1866-67 by J. M. Bigelow, A. Commons, G. Engelmann, R. Hall, H. W. Ravenel and C. E. Smith. It is thought that these specimens came to Cheeseman as exchange but no letters have been found between him and the Missouri Botanical Garden.

No mention is made here of the duplicates from 19th century collectors which came to the Auckland Institute and Museum Herbarium after Cheeseman's time (1874-1923), ex Gray Herbarium of Harvard University, Missouri Botanical Garden, and the private herbarium of George R. Cooley.



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Figs. 14, 15. Herbarium labels. 14. Label ex Herbarium Wellesley College (Mass.) September 1879 (10cm x 3.5cm).



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15. Label ex Herbarium John H. Sears, 12 May 1878 (13.8cm x 6.6cm).



The late 19th century botanical specimens from Martindale, Canby and other American collectors, together with exchanges Cheeseman made during the same period with European herbaria, formed the nucleus of the overseas or exotic plant collections in the Auckland Institute and Museum Herbarium. Today exchange is continued with some fifteen overseas herbaria, including seven in U.S.A.

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